
The “patent bargain” for clean technologies — altering the deal

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Environmental consciousness — especially as it pertains to climate change is increasing exponentially throughout the world. Moreover, it is generally accepted that pollution cannot be stabilised with existing technologies.¹ Clean technology, or “cleantech”² — technologies that may lessen, nullify or even reverse the environmental impact of an existing product or process is a thereby a buzzword in many aspects of society — including patent law.³

The essential quid pro quo of the “patent bargain” is that in exchange for providing the public with a new invention, a patentee is afforded a 20-year exclusive period in which to exploit it. This is “IP101” — and history has generally shown it to be sufficient inducement with which to stimulate inventive activity.

Whereas new inventions are typically patented with a view to profiting the patentee, some cross over into the realm of also providing a great benefit to the public. However, what happens when an invention is of such outstanding public benefit that the patentee’s right to exclude others is arguably contrary to the interests of society? In such circumstances, the patent bargain does not fit well with the advancement of the species and gives rise to a real tension between the two.

Pharmaceutical patents are one example of this tension. However, it can be argued that patent exclusivity for pharmaceuticals is a necessary evil given the enormity of both research, development and engineering (RD&E) and clinical trials costs associated with getting a product onto the market. Moreover, while the respective definitions of happy may be somewhat different, a lifesaving drug sold under patent generally makes for both a happy patentee and a happy consumer.

Another example — one not quite so easily reconciled, is that of cleantech; for instance, a patent for a “cleaner” method of manufacturing cement. Clearly, it is in the patentee’s best interests to exploit the exclusivity conferred by the patent in working or licensing the invention. On the other hand, it is in society’s best interests that such an invention is placed immediately in the public domain. To generalise, cleantech doesn’t invite the same RD&E costs as pharmaceuticals. As such, it could be argued that in the case of cleantech,

society’s need may actually be greater than the patentee’s right — which is, of course, completely at odds with the original patent bargain. At first glance, there appear two main ways in which this impasse may be reconciled.

First, governments may provide for a non-commercial use exception (NCUE) to infringement, under which a third party is able to exploit a patented cleantech if it can be shown that their motives are not commercial in nature; and/or second, provide for a compulsory licensing regime allowing governments to commandeer patented cleantechs and exploit them for the good of the environment.

Of course, these alternatives — and indeed any other “altering” in favour of the public, erode a patentee’s basic right to exclusivity. Erode the right and you lessen the incentive to invent in the first place. Clearly, some measure of compensation is due. Perhaps the most obvious include making cleantech patents easier to obtain by, for instance, lowering the inventive step threshold; and/or making the effective life of cleantech patents longer than the standard 20 years.⁴

Unfortunately, neither of these measures is satisfactory. Lowering the bar on inventive step may result in more cleantech patents being granted at the lower end of the spectrum — but it would fail to adequately stimulate the high-end inventions that would more likely be subject to the above-suggested NCUE or compulsory licensing (and would be more likely to save the planet). Moreover, extending the patent term necessarily ignores the fact that much cleantech is likely to be short-lived or incremental in nature.

On this basis, there appears no obvious statutory tweak that would provide adequate compensation for a cleantech patent being effectively hijacked in the name of the public good.

This theoretical tension actually played out a few years ago in real life. At the Copenhagen Summit of December 2009,⁵ China sought special exemptions so that it could exploit certain cleantech patents for hybrid cars without paying licence fees.

Acceding to the Chinese requests would have altered the patent bargain for the patentees, ultimately affecting

their bottom lines — and threatening the future development of hybrid technologies. On the other hand, the environmental good that could be accomplished through making hybrid cars accessible to the Chinese population is staggering. In the alternative, pass on a licence fee to consumers and you limit the uptake of the related cleantech, which will be ultimately to the detriment of the environment. Which answer is correct?

Of course, what China was asking for was the introduction of a compulsory licensing regime. However, the fact that a final binding agreement required the consensus of all countries party to the Copenhagen negotiations effectively sounded the death knell for any form of compulsory licensing based on the “government takes what it wants” model.

In cases where no solution is apparent, it is commonplace to call for government intervention. The simplest way in which cleantech patents may adequately benefit both the patentee and the public is for the relevant government/s to step in and pay an appropriate royalty in exchange for its compulsory licence. However, it is improbable that any government would wish to match the free market value of a breakthrough cleantech invention. This again undermines the incentive to invent — or alternatively, provides almost a reverse-incentive to invent mediocrity that will not risk being subjected to a compulsory licence. An alternative is that cleantech investors simply alter their focus — their RD&E dollar is directed elsewhere, a “eureka-type” invention in pharmaceuticals could net billions on the free market.

The NCUE is perhaps best considered an adaptation of the experimental use exception (EUE) to patent infringement. It is widely accepted throughout much of the world that experimenting with a patented invention is permissible to the extent that such actions are not commercial in nature. However, any NCUE must necessarily go beyond mere experimentation and provide for actual use of the patented product or process. This of course, conflicts with the Agreement on Trade-Related Aspects of Intellectual Property Rights, which confines exceptions to a patentee’s rights to circumstances that are “limited” and do not “unreasonably conflict with a normal exploitation of the patent”.⁶

For instance, if one vendor offers a product or service for free (or a nominal cost-neutralising fee) — and another charges a premium for the exact same thing, who’s going out of business first?

Another clear drawback of the NCUE is that it could become susceptible to abuse. With the EUE, the differing social, political and economic climate of individual countries necessitates a unique line in the sand as to precisely where experimentation ends and exploitation

begins. However, with any proposed NCUE, presumably all that would need to be shown is a zero on an alleged infringer’s balance sheet — and there are various ways and means to this end.

Notwithstanding, the principle shortcoming of the NCUE has already been alluded to above. A patentee cannot make a return on their investment where another is allowed to undersell them in the market. Moreover, government compensation to redress this disparity is probably more readily administered through a compulsory licensing regime than via the NCUE. On this basis, the NCUE is ultimately an unworkable ideal.

While somewhat less extreme than the measures proposed above, there have been other recent developments toward establishing a more efficient cleantech community within the existing patent system. For instance, in 2010 the World Intellectual Property Organization (WIPO) launched the IPC Green Inventory⁷ — an online tool intended to assist users in identifying existing and emerging cleantech, as well as isolating potential commercial partners. The most recent iteration is simply named “WIPO Green”.⁸

Further, the national patent offices of several major jurisdictions have facilitated the expedited examination of applications relating to cleantech. For instance, the US Patent and Trademark Office (USPTO),⁹ UK Intellectual Property Office (UKIPO)¹⁰ and IP Australia¹¹ among others, each now offer (or have offered) such a scheme. While these programs each have subtle differences, the fundamental principle is that a cleantech patentee now has means to jump the queue with respect to “unclean” applications. In the case of small or start-up patentees, a granted patent is often required in order to attract investment. On the other hand, the associated legal costs may not have been budgeted for so early in the life cycle of the patent. Moreover, the many companies who file patents for defensive reasons generally have less motivation to proceed via this route.

As highlighted in the Advisory Council on Intellectual Property (ACIP) review on *Patents and Experimental Use*,¹² certain other measures may be adaptable to cleantech. For example, a fair dealing defence, largely analogous to that found in copyright law,¹³ is largely self-explanatory. However, it is worthwhile noting that this would necessarily overlap to some degree with the NCUE — and that the judicial parameters of “fair” are likely even more of a minefield than the proposed zero profit criterion for the NCUE.

Next, the patent pools model purports to facilitate the efficient trading of patent rights. In this respect, a significant impediment to any potential developer of cleantech has been the emergence of patent thickets which cover every foreseeable twist and turn along the path to a new technology; such thickets have arisen in

respect of fuel cells, wind energy and carbon sequestration technologies. Accordingly, money initially earmarked for cleantech RD&E risks being siphoned off to pay for infringement opinions and cross-licensing arrangements.

One such pool is the GreenXchange,¹⁴ based on the Creative Commons¹⁵ project for copyright. A variant is the Eco-Patent Commons,¹⁶ which requires members to forego suing other members who exploit Commons patents for environmentally-beneficial uses. However, various competition authorities have placed stringent conditions on such patent pools in recent years, which could be argued to have restricted their uptake and appeal.

While it appears — at least for now — as though cleantech may be a square peg within the round hole of the existing patent system, studies have suggested that any barriers patents provide to the adoption of cleantech are not insurmountable.¹⁷ For instance, a study of the solar and biofuels sectors revealed that each is sufficiently competitive as to allow developing countries to take advantage of the respective technologies without paying crippling licensing fees.¹⁸

As discussed above, cleantech RD&E may be cheap only by comparison with pharmaceuticals. This hints at the desirability of maintaining the regular patent bargain for cleantech, given that during the initial RD&E phase, intellectual property will often be a cleantech company's most valuable asset. Moreover, patenting creates opportunities for cross-licensing deals and strategic use to negotiate joint venture arrangements. Finally, patents can be instrumental in a cleantech company's exit strategy, by way of going public or being acquired. The argument therefore is that any diminution of a cleantech patentee's rights may amount to a distortion of the free market principles that are a staple of various competition authorities. However, the counterargument is likely just as applicable.

For completeness, it is also worth noting that patents weren't the only spanner in the works of a global climate treaty in Copenhagen; the related field of technology transfer appears to have been equally implicated.¹⁹ To a large extent, improving technology transfer will ultimately be reliant upon the incentives offered for the sharing of cleantech, which leads immutably to the same issues faced — and ultimately unaddressed in respect of cleantech patents.

The above discussion represents what is likely only the opening stanza in what is sure to be a fascinating period in patent law. Cleantech will continue to poke and prod the patent system in ways that were probably never envisaged — and it will be interesting to see if, when and how any changes eventuate so as to better accommodate “public” cleantechs within the “private” patent

system. While the cynic may suggest that the Copenhagen Agreement would have materialised if the pollution issue was perceived as real, the pragmatist would likely counter that if a genuine fix was apparent from within a 2000-word article, it would have been adopted long before now.

Takeaway tips

- Interpret “cleantech” broadly: a “dirty” technology can still be “clean” if it's cleaner than competitors' existing technologies — it's all relative.
- To expedite or not to expedite (examination): there are pros and cons depending upon where your client is at legally, financially and commercially — one size certainly doesn't fit all.
- Cleantech is a “feel good” industry: combining making a living with cleaning up the planet is a win-win situation.



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Footnotes

1. See eg, J H Lehr, *Wiley's Remediation Technologies Handbook: Major Contaminant Chemicals and Chemical Groups*, Wiley-Interscience, New Jersey, 2004; and R Noyes, *Handbook of Pollution Control Processes*, Noyes Publications, 1991.
2. Also known as “greentech”, “envirotech”, “environmentally sound technologies (ESTs)”, etc.
3. See eg, C Scott, Green tech's big patent problem, 29 April 2010, www.inhabitat.com/2010/04/29/green-techs-big-patent-problem.
4. *Agreement on Trade-Related Aspects of Intellectual Property Rights* (entered into force 1 January 1995) Art 33 www.wto.org/english/docs_e/legal_e/27-trips.pdf.
5. United Nations Climate Change Conference (Copenhagen, Denmark 7-18 December 2009), incorporating the 15th Conference of the Parties (COP15) to the *United Nations Framework Convention on Climate Change* signed 4 June 1992 (entered into force 21 March 1994) <https://unfccc.int/resource/docs/convkp/conveng.pdf> and the 5th Meeting of the Parties (MOP5) to the *Kyoto Protocol* signed 11 December 1997 (entered into force 16 February 2005) <https://unfccc.int/resource/docs/convkp/kpeng.pdf>.
6. Above n 4, Art 30.
7. WIPO, IPC Green Inventory, www.wipo.int/classifications/ipc/en/green_inventory/.

8. WIPO Green's website available at www3.wipo.int/wipogreen/en/.
9. See USPTO, Green Technology Pilot Program, www.uspto.gov/patents/init_events/green_tech.jsp.
10. See UKIPO, Patents: accelerated processing, 1 August 2018, www.gov.uk/guidance/patents-accelerated-processing#green-channel.
11. See IP Australia, Expedited examination for standard patents, 11 January 2018, www.ipaustralia.gov.au/patents/applying-patent/standard-patent-application-process/examination-standard-patent/expedited-examination-standard-patents.
12. ACIP *Patents and Experimental Use* (October 2005) www.ipaustralia.gov.au/sites/g/files/net856/f/acip_final_report_patents_and_experimental_use_archived.pdf.
13. Copyright Act 1968 (Cth), ss 40 to 43(2) and 103A to 103C.
14. GreenXchange's website available at <https://web.archive.org/web/20110509133220/http://www.greenxchange.cc/>.
15. Creative Commons's website available at <http://creativecommons.org>.
16. See W Balta, Welcome to the Eco-Patent Commons, 7 September 2015, www.corporateecoforum.com/welcome-to-the-eco-patent-commons/.
17. See eg, R Barrigar, Patents are no barrier to innovation, despite the myths, 16 May 2018, www.theglobeandmail.com/report-on-business/rob-commentary/patents-are-no-barrier-to-innovation-despite-the-myths/article29663542/.
18. J H Barton, Patenting and access to clean energy technologies in developing countries, March 2009, www.wipo.int/wipo_magazine/en/2009/02/article_0005.html.
19. See eg, Deutsche Welle, Assessing the role of patents in combating climate change, 12 July 2010, www.dw.com/en/assessing-the-role-of-patents-in-combating-climate-change/a-6299080.